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ABSTRACT

This report describes a practicum that was designed to improve the social skills of eight preschool children with autism or Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), through interactions with their typically developing peers. The children were taught in a classroom with eight typically developing children using a regular education curriculum, with modifications to address specific individualized education program goals and objectives. Learning centers were used to teach the academic skills; group time was used to teach beginning concepts; play time was used to teach social skills; and small group time was used to promote interactions between typically developing children and the children with autism. Skill streaming, pivotal response training, and a group contingency were utilized in these settings. Seven of the children with autism improved in each of the four social areas that were studied: (1) eye contact; (2) parallel and symbolic play skills; (3) turn taking; and (4) verbal and nonverbal responses. The use of peer modeling was found to be highly successful in maintaining integration of the children in the class. The typically developing children made gains in academic skills, expressive language, and self-esteem. (Contains 20 references.) (CR)

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Increasing Social Interactions of Preschoolers with Autism through Relationships with Typically Developing Peers.

by

James Ball

Cluster 65

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for the Degree of Doctor of Education

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PRACTICUM APPROVAL SHEET

This practicum took place as described.

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This practicum report was submitted by James Ball under the direction of the advisor listed below. It was submitted to the Ed.D. Program in Child and Youth Studies and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

Approved:

August 27 1996
Date of Final Approval of Report

Mary Staggs Ed.D.
Mary Staggs, Ed.D., Advisor

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ABSTRACT

Increasing Social Interactions of Preschoolers with Autism through Relationships with Typically developing Peers. Ball, James, 1996: Practicum Report, Nova Southeastern University, Ed.D. Programs in Child and Youth Studies. Social Skills/Developmental Disabilities/Special Education/Skill Streaming/Group Contingency/Typically Developing/Autism/Pervasive Developmental Disorder - Not Otherwise Specified

This practicum was designed to improve the social skills of children with autism or Pervasive Developmental Disorder - Not Otherwise Specified (PDD-NOS) through interactions with their typically developing peers. Skill streaming, pivotal response training, and a group contingency were utilized to achieve these outcomes: improved eye contact, improved parallel and symbolic play skills, improved turn taking skills, and improved verbal and non-verbal responses.

The writer used skill streaming as the means to teach social skills to the entire class, as well as the use of a group contingency for motivation to display the skills being taught. The children were reinforced with stars every time they utilized the social skill being targeted and once the chart was filled, the class would receive the reinforcer voted on at an earlier time. The use of pivotal retraining was used to teach the children with autism/PDD-NOS how to develop symbolic play skills, so that it was easier for them to play with their peers, thus engage in the outcomes expected by this project.

Through the use of skill streaming, pivotal response training, and a group contingency, all the children with autism/PDD-NOS achieved the expected outcomes.

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Permission Statement

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CHAPTER I

INTRODUCTION

Description of the Community

The community where the practicum took place is located in the suburbs of a densely populated state in the eastern part of the country. Located on the shore, the community has an overall population of 30,000 people. The main thoroughfare in the community is a road famed in song and folklore. The economy in the community is stagnate and many major industrial companies have moved to other locations for monetary reasons.

The ethnic make up of the community is primarily Afro-American and the socioeconomic makeup is lower middle-class, however, there are two very affluent areas in the community. There is also a large population of Hispanics and Middle Easterners. The community has a major university and three colleges in close proximity. The population has been stable in the past, however in recent years has begun to decline. The dominant school district in the area has been taken over by the state for monitoring and fiscal management.

Writer's Work Setting and Role

The work setting is a for-profit private school. The private school provides educational services to children ages 3 through 21 with a variety of disabilities. The services provided are comprehensive and follow the goals and objectives outlined in the child's individual education plan (IEP). Training in adaptive living skills, prevocational skills, speech and language therapy, occupational therapy, physical therapy, and family consultation provide the child with a well balanced and functional educational experience.

The primary funding source for the private school is tuition received from the sending school district of each child. As originally outlined in PL-94-142 (1975), each school district must provide school-aged children with a "free and appropriate education". In some cases, the school district must look elsewhere to place children with severe disabilities. The student body at the private school is made up of children residing throughout the state where the school is located.

The school facilities are adapted to meet the needs of the children in the program. In addition to classrooms, the school contains a multi-purpose gymnasium, fully equipped treatment rooms for occupational therapy and physical therapy, adaptive living skills rooms, speech therapy offices, fully equipped health office, and an outdoor recreational and play facility. These services enable the organization to provide services to children with multiple handicaps (MH) and children with a diagnosis of autism or pervasive developmental disorder not-otherwise-specified (PDD-NOS).

There were a total of two-hundred and fifty children enrolled at the private school, one-hundred and fifty-five in the MH division and ninety-five in the autism/PDD-NOS division. The school is certified by the State Department of Education and is staffed by certified teachers of the handicapped and instructional assistants resulting in the average in class student/instructional staff ratio of 3 to 1 in the higher functioning MH classes, and 2 to 1 in the autism/PDD-NOS, preschool and lower functioning MH classes.

The focus of this practicum concentrated on the autism/PDD-NOS division of the private school. Autism is a developmental disorder that severely impairs how children with the disorder perceive their environment and make sense of their world (Autism Society of America, 1993). The disorder affects functioning in communication, behavior, and social skills; is lifelong and requires a full range of services for the students to achieve their highest potential.

There were twelve certified teachers and fifty-five instructional assistants employed in the autism/PDD-NOS division of the private school. Each child enrolled received both speech and language therapy and occupational therapy. The children ranged in disability from children with Aspergers Syndrome (high functioning autism) to children with autism with severe mental retardation.

One of the overall goals of the private school is to transition those children who have shown the appropriate skills to the least restrictive environment. This may take the form of a self-contained classroom back in the child's home school district or inclusion in a regular education class in the home school district.

The private school works in conjunction with the child study team of the child to provide the appropriate services to make this process a success.

The writer is the unit supervisor of autism at the work setting. The writer is responsible for the overall coordination of the autism/PDD-NOS division of the private school including staff supervision, budget and curriculum development, classroom design, behavior management, general oversight of the IEP process, and family consultation. The writer also coordinates all new program development in the autism/PDD-NOS division.

CHAPTER II

STUDY OF THE PROBLEM

Problem Description

The problem was that preschoolers with a diagnosis of autism or PDD-NOS did not interact with their typically developing peers in an appropriate manner. Within the private school there were no typically developing peers for social interactions. Consequently, interactions for children with autism/PDD-NOS with their typically developing peers was provided solely by the family with guidelines established for the families in providing such interactions (i.e., community involvement events). This avenue had proven to be difficult for most of the families due to the family either having a lack of resources available or not having the time to make a true commitment to the plan.

Problem Documentation

The private school provided transition services between the MH division and the autism/PDD-NOS division specifically designed to enhance social interactions.

This plan involved one MH class paired with one autism/PDD-NOS class of approximately the same age, with the MH class having more appropriate social skills as determined within the IEP goals. The design was to have the MH class children model appropriate social skills for the autism/PDD-NOS class, thus having the children with autism/PDD-NOS imitate the appropriate social interactions and carry them over to their own classroom and then into the community.

Children with autism require guidance in interacting with their peers. Inherent in the nature of the disability of autism/PDD-NOS, children with the disorder do not socially interact without proper guidance. The use of discrete trial teaching has proven to be the most effective strategy to teach children with autism (McEachin, Smith, & Lovaas, 1993). This technique allows for errorless learning and provides positive reinforcement for correct responding. The student with autism is then motivated to respond again and again in a similar fashion to receive the reinforcement. However, the skills learned are not always transferred or generalized into different settings (i.e., community involvement activities).

The private school had made a commitment to community involvement activities designed to give the students a wide variety of experiences in different activities (i.e., horseback riding, bowling, swimming, and roller skating) to promote the generalization of prosocial skills.

It was difficult for a student with MH or autism/PDD-NOS to occupy their time in a socially appropriate or independent manner, therefore the private school designed a comprehensive program that would give the children a hands-on activity schedule to guide and teach the children and enhance their skills. However, based on the data of the IEP goals and objectives, the students with autism/PDD-NOS did not effectively use their social skills during these activities.

Skill Streaming In Early Education by Ellen McGinnis and Arnold P. Goldstein was utilized to teach both groups prosocial skills. The approach was chosen because it was very applicable to both populations and it focused on those skills that were necessary to promote inclusionary activities. Based on the 1994-95 school year program data, skill streaming was not very effective in teaching the children with autism/PDD-NOS prosocial skills that they could generalize.

Typically developing children learn about socialization through play activities (Morrow & Rand, 1991), therefore, most of the social skills targeted in the IEP at the preschool level are around play skills. The children with autism/PDD-NOS must be taught to play appropriately with toys and transfer those skills into parallel play and then to symbolic play. However, only approximately 51% of the IEP goals and objectives in the social skills area were achieved on the preschool level for children with autism/PDD-NOS at the private school during the 1994-95 school year.

Based on anecdotal data collected during the 1994-95 school year, a majority of the social interactions between the children with autism/PDD-NOS were with staff members, not peers in their class. Social interactions did not take place, peer to peer, based on a lack of overall social skills of the children in the class. Exchanges in the classroom were designed to encourage social interaction between peers, however this did not always take place.

Causative Analysis

There were numerous causes to the existence of the problem. First, there was no effective social skills curriculum being utilized with the children with autism/PDD-NOS. The skill streaming curriculum being used to teach prosocial skills to both the MH and the children with autism/PDD-NOS was effective in teaching isolated skills, however, it was not effective in programming for the transfer or generalization of these learned skills into other settings. In the 1994-95 school year, there was only a 3 point gain in social skills by the children with autism/PDD-NOS. Based on the scoring of the skill streaming teacher checklist, this reflected no gain in overall prosocial skills.

Second, there were no age appropriate, typically developing peers in the private school to use as models for appropriate social interactions. As discussed previously, the MH classes were used as transition classes; however, their social skills were only higher in a relative sense; many students had social skills delays.

Therefore, based on the style of teaching (skill streaming), the skills might have been learned in isolation. However, they were not able to generalize these skills to different settings, especially during community involvement activities which usually involved typically developing peers as participants.

Third, having no age appropriate, typically developing peers at the private school, there were also no age appropriate language models for the children with autism/PDD-NOS. Autism/PDD-NOS is a communication disorder, and to interact with their typically developing peers, the students with autism/PDD-NOS need to use age appropriate language. Again, the children with autism/PDD-NOS do learn to use speech in isolation. However, they do not generalize their language usage to different environments or social situations.

Fourth, based on the disability of autism/PDD-NOS, social interactions are very difficult, especially for children with high functioning autism/PDD-NOS. These children normally achieve at a higher academic level than their typically developing peers and possess the verbal language, however, fall very short in terms of social skills. Social skills training has been effective for these children, but interactions with peers of the same age is critical for transfer and generalization of social skills to community settings.

Relationship of the Problem to the Literature

This problem has been well documented in the field of special education.

As stated in the early literature pertaining to mainstreaming, children with handicaps interact less and in more reciprocally negative ways with their typically developing peers during mainstreaming activities, even though they have proven that they have the basic knowledge to handle social situations (Odom, Hoyson, Jamieson, & Strain, 1985). This would hold true to the notion that the basic skill can be taught, however, the problem is application of the skills into functional settings, for example, the regular education classroom.

As reported by Salisbury, Gallucci, Palombard, and Peck (1995), with the use of typically developing peers as models, handicapped children with severe disabilities have shown greater progress than with handicapped peers, in the use of social skills. As discussed earlier, social skills are critical for young children in order to learn and interact in play activities. The use of typically developing peers enhances the transfer of these skills to their handicapped peers. The use of age appropriate models allows the handicapped peers opportunities to engage in age appropriate play and transfer of those newly learned skills into other settings.

Odom and McEvoy (1990), reported that through integration there is a higher quality and quantity of experiences for children with disabilities in communication, language and social interactions. This does not take place as rapidly or productively in a segregated setting.

Based on the nature of the disability of autism/PDD-NOS, children with this disorder have severe deficits in communication, language, and social interactions; therefore, as described by Odom and McEvoy, these children should experience maximum benefit from an integrated setting.

Guralnick (1990), further strengthened the use of an integrated setting for children with handicaps by concluding that children with disabilities require access to typically developing peers to achieve more productive developmental growth, which does not occur in a segregated setting. By allowing the handicapped children access to non-disabled peers, the modeling of age appropriate skills is enhanced and developmental growth is achieved. The critical component is the interactions between the non-handicapped and handicapped children.

Harris, Handleman, Kristoff, Bass, and Gordon (1990), further investigated the role integration played on the language development of children with autism. Their study focused on a language enriched integrated preschool to primarily develop social skills in the targeted (autistic) population; however, they also found that the children with autism gained substantial language development being paired with typically developing peers. The study concluded that the targeted children actually began to gain developmental progress in the area of language and closed the gap between themselves and the typically developing peers, as opposed to remaining the same or losing language skills.

It was evident, through the above literature, that an integrated setting must be utilized in order to achieve appropriate prosocial behavior in children with autism/PDD-NOS. The use of typically developing peers heightens the social and communicative skills of peers with handicaps and allows for appropriate modeling of such skills. The use of skill streaming alone was not the answer for children with autism/PDD-NOS. However, the use of typically developing, age appropriate peers in conjunction with skill streaming would be useful in promoting prosocial behavior.

CHAPTER III

ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Goals and Expectations

The goal was to improve communicative and social interactions of children with a diagnosis of autism/PDD-NOS. Children with a diagnosis of autism/PDD-NOS do not interact with their peers. They are much more content being by themselves and not having to interact with others. They tendto treat other people like tools in order to get their needs and wants met. The improvement of communication and social skills enables the children with autism/PDD-NOS to be more successful in understanding their environment and become more productive members of society.

Expected Outcomes

The expected outcomes focused on the increase in social and communication skills exhibited by the children with autism/PDD-NOS. It was anticipated that each child with autism/PDD-NOS would: make eye contact when cued; demonstrate parallel and symbolic play skills; exhibit turn taking skills during a group game; and demonstrate spontaneous verbal or non-verbal responses when interacting with their typically developing peers.

The first expected outcome was that all 8 of the children with a diagnosis of autism/PDD-NOS would make eye contact when cued. Children with autism/PDD-NOS, by definition of their disability, do not make significant eye contact, which does not allow them to appropriately socially interact with adults or peers. By not making eye contact on a consistent basis, these children develop isolate skills and do not transfer these skills to functional setting (i.e., social interaction with another child).

Each of the 8 children will make and maintain eye contact for 8 to 10 seconds when their name is called, in a variety of settings, in 9 out of ten attempts. The staff will record data on a daily basis during learning center time. Each time a child responds for 8 to 10 seconds when his name is called, the staff member will record a correct response. Each time the child does not maintain eye contact for 8 to 10 seconds, the staff member will record an incorrect response. Once the child has achieved the goal during learning center time, the data will be taken throughout the child's day to ensure appropriate generalization of the skill.

The second expected outcome was that the children with autism/PDD-NOS would demonstrate parallel and symbolic play skills. A vast majority of children with autism/PDD-NOS do not display any play skills by definition of their disability. Preschool and early childhood children learn how to socialize through play.

Children with autism/PDD-NOS' inability to play does not allow for productive interactions with their peers, thus, meaningful social interactions do not take place. Parallel play skills are a prerequisite to symbolic play skills. Therefore, parallel play skills will be initiated with the children first, and symbolic play skills will be introduced upon achievement of parallel play skills.

Each of the 8 children will demonstrate parallel play skills, in a variety of settings, in 9 out of 10 attempts. The staff will record data on a daily basis during small group time. Each time a child plays with a toy next to a peer for one minute, the staff member will record a correct response. Each time the child does not play with a toy for one minute next to a peer, the staff member will record an incorrect response. Once the child has achieved the goal during small group, the data will be taken throughout the child's day to ensure appropriate generalization of the skill.

Once the child has achieved the parallel play skill, the staff will move him on to symbolic play. As with parallel play skills, each of the 8 children will demonstrate symbolic play skills, in a variety of settings, in 9 out of 10 attempts. The staff will record data on a daily basis during small group time. Each time a child plays with an object and pretends it is something else for one minute (i.e., pot and wooden spoon as a drum and drum stick), the staff member will record a correct response. Each time the child does not play with an object and pretends it is something else for one minute (i.e., pot and wooden spoon as a drum and drum stick), the staff member will record an incorrect response.

Once the child has achieved the goal during small group, the data will be taken throughout the child's day to ensure appropriate generalization of the skill.

The third expected outcome was that the children with autism/PDD-NOS would demonstrate turn taking skills during a group game. In order for children with autism/PDD-NOS to be successful in a group setting, they need to be able to take turns. Many children with autism/PDD-NOS, by the nature of their disability, do not have the ability to wait. This makes it very difficult for them to engage in group games with their peers, which is essential for social growth.

Each of the 8 children will demonstrate turn taking skills, in a variety of settings, in 9 out of 10 attempts. The staff will record data on a daily basis during group time. Each time the child waits for 15 seconds prior to his turn, the staff member will record a correct response. Each time the child does not wait for 15 seconds prior to taking his turn, the staff member will record an incorrect response. Once the child has achieved the goal during group time, the data will be taken throughout the child's day to ensure appropriate generalization of the skill.

The final expected outcome was that the children with autism/PDD-NOS would demonstrate spontaneous verbal or non-verbal responses when interacting with their typically developing peers. By the nature of the disability, children with autism/PDD-NOS have difficulty communicating with adults or peers.

Even when significant language is present, children with autism/PDD-NOS do not spontaneously use their communication to socially interact with people in their environment.

Each of the 8 children will demonstrate spontaneous verbal or non-verbal responses when interacting with their typically developing peers in 9 out of 10 attempts. The staff will record data on a daily basis during playground time. Each time the child initiates a verbal interaction with a peer or interacts non-verbally with a peer, the staff member will record a correct response. Non-verbal responses will be defined as any appropriate tapping another child to gain attention, making sustained (ten to fifteen seconds) eye contact, and/or make a waving gesture to have a peer join in a game. Each time the child does not initiate a verbal interaction with a peer or interacts non-verbally with a peer, in a situation in which an interaction should have taken place (i.e., the child takes the swing from another student and does not interact verbally or non-verbally with the child), the staff member will record an incorrect response. Once the child has achieved the goal during playground time, the data will be taken throughout the child's day to ensure appropriate generalization of the skill.

Measurement of Outcomes

The expected outcomes were measured by the progress report generated by the child's IEP. Each child would demonstrate 9 non-prompted attempts at eye contact, parallel and symbolic play skills, turn taking skills, and verbal and non-verbal interactions with their typically developing peers out of 10 attempts (90% correct responding).

Prior to the implementation of the proposal, each child selected for participation in the program had an IEP review based on their social skills section. The goals and objectives outlined in the IEP were based on the individual child's needs in the social area. The expected outcomes were consistent with each child's IEP. This would also allow the private school to be in compliance with instruction based on state and federal law.

CHAPTER IV

SOLUTION STRATEGY

Discussion and Evaluation of Solutions

The problem was that preschoolers with a diagnosis of autism or PDD-NOS do not interact with their typically developing peers. The lack of age appropriate, typically developing peers for integration with children with autism/PDD-NOS has been a problem for many years. Children with autism/PDD-NOS are usually educated in a variety of private organizations or in self-contained classrooms in their home school districts, based on the severity of their disability. However, as cited by Tomcheck, Gordon, Arnold, Handleman, and Harris (1992), the use of typically developing peers in an integrated setting facilitates social and language development in preschool children with a diagnosis of autism and PDD-NOS.

Tomcheck, et al, designed a program called "small wonders" that integrated typically developing peers with their autistic/PDD-NOS counterparts. The program was implemented at a private not-for-profit school for children with autism and PDD-NOS. The class was structured with 6 children with autism/PDD-NOS and 8

typically developing preschoolers. The class used a developmentally appropriate curriculum that was high in language enrichment. The curriculum was also designed to follow a public school approach to educating children. They reported that a higher percentage of their students with autism/PDD-NOS have been included into their home school districts for kindergarten after one year in their program.

Myles, Simpson, Ormsbee, and Erickson (1993), performed an empirical study based on the integration of children with autism/PDD-NOS with typically developing peers. There were 7 total participants, 4 with a diagnosis of autism/PDD-NOS and 3 typically developing peers. Myles, et al, found that social exchanges did not take place unless a structured curriculum was utilized that would promote such interactions. The study concluded that "time spent with normally developing children should not substitute for other components of an effective educational program (p. 10)". This required a curriculum modification for the children with disabilities in the class.

McGinnis and Goldstein (1984), cited that the use of skill streaming has proven very effective in teaching children in the elementary school prosocial behavior. Skill streaming is taught in a manner that is consistent with the way children with autism/PDD-NOS learn. The lesson is introduced with the use of simple language and a pictorial representation that makes it easier for the children to understand. The skill is modeled through the use of role play or puppetry, and the class reviews the skill on a daily basis.

As the class becomes more proficient in the use of the skill (i.e., "asking for help"), the class is required to use the skill in different environments. This is the transfer training component in the skill streaming curriculum. Through the use of rewards and positive reinforcement, the children are encouraged to use the skill in a variety of settings. The ideal time spent on each skill is one month (based on the private school's experience) and each skill builds on one another to enhance retention of previously learned skills.

Stahmer (1995), investigated the use of pivotal response training in teaching children with autism or PDD-NOS symbolic play behaviors. Play skills are critical for the development of representational thought, assimilating new information and comparing it to past experience, and using abstract thought (Morrow & Rand, 1991). Preschool classrooms are rich with play areas, and play is a key component to the curriculum. Children with autism/PDD-NOS have limited play skills and require training to play with toys appropriately. Symbolic play is a complex skill that requires the child to use imaginary thought to play with objects and pretend they are something different, for example, using a pot and a wooden spoon to play the drums while singing a song.

Through the use of pivotal response training, children with autism who had sufficient language were taught to engage in symbolic play at levels similar to typically developing peers. The children with autism were taught how to play with toys in isolation through the use of rewards. The adult would play with the child and have the child imitate what he/she was doing. Once the child was able to play

appropriately, situations were set up that allowed the child with autism the opportunity to transfer the newly learned skills with their typically developing peer. This progressed until the child was able to play in a group of children in a variety of settings. Stahmer concluded that the pivotal response training was very effective in teaching and maintaining symbolic play skills in children with autism.

The most important aspect of teaching children with autism is motivation. Learning is inherently aversive to children with autism. They would much rather be left alone to engage in the behaviors that are common and understandable to them. Therefore, reinforcement systems must be designed to motivate the child with autism to respond to teaching strategies. Lefebvre and Strain (1989), designed a study to evaluate the use of a group contingency with children with autism and their nonhandicapped peers to improve social interactions.

The study concluded that a group contingency was an effective way to maintain a high level of social interactions between children with autism and their nonhandicapped peers. The authors went further by saying that the group contingency required less teacher intervention to promote social interactions and that spontaneous interactions between the two sets of students in the class increased.

Description and Selected Solution

As described in detail in the literature, an integrated approach to teaching children with autism/PDD-NOS communicative and social skills is the most desirable. Typically developing children enrolled in a

classroom with children with autism/PDD-NOS enhances the chance of appropriate social interactions, modeling of appropriate language and social skills by the typically developing children to the children with autism/PDD-NOS. Therefore, the formation of an integrated preschool is critical to the overall development of children with autism/PDD-NOS.

A class consisting of 8 typically developing children and 8 children with a diagnosis of autism/PDD-NOS was established at the private school. Both sets of students were assessed using the private school's criteria for inclusion in the integrated preschool (see appendix A). This check list was designed to assist the staff in choosing the students that were most appropriate for the class and who possessed the prerequisite skills that would enhance their success rate in the preschool.

The classroom make up was 4 typically developing boys and 7 boys with autism/PDD-NOS and 4 typically developing girls and 1 girl with autism/PDD-NOS. A regular education curriculum with modifications to address specific IEP goals and objectives was utilized for the classroom. Learning centers were used to teach the academic skills; group time was used to teach beginning concepts; play time was used to teach social skills; and small group time was used to promote interactions between the typically developing children and the children with autism. A variety of other activities were used to promote gross and fine motor development as outlined in the daily schedule.

Social skills were taught during play time according to the curriculum, however, a modification of the skill streaming curriculum was utilized during morning circle to teach specific skills. Once a month a specific social skill was selected that was reflective of IEP goals being implemented for the students with autism/PDD-NOS (i.e., using nice talk, listening, asking for help). Modeling, puppetry, and verbal praise were used to motivate the students to appropriately interact.

During the morning circle, the skill was introduced. A poster board was created and it defined the skill being taught using simple words and an icon for a pictorial representation of the skill. The staff then modeled the appropriate interaction and asked the children about what they observed. The poster was displayed in the classroom throughout the month and would be used for reference when a child was not using the skill to help the child remember what was appropriate.

The adaptation of a group contingency was utilized as reinforcement for skill streaming. The skills being worked on for the month were reinforced throughout the month period with verbal praise, and the children earned a star every time they used the skill in an appropriate manner. Once the "star chart" was filled in, all the children received a reinforcer that they chose at the beginning of the month. The class voted on the activity which they worked for as their reinforcement which included such choices as a party, a community outing, or a field trip.

During play time, the use of pivotal response training was used to enhance the symbolic play skills of the children with autism/PDD-

NOS. At the beginning of play time, each child was asked where he/she would like to play and was allowed to go to that area and play. Initially, the teacher worked one-to-one with the child until he/she mastered a specific skill in the area of choice. Once the skill was mastered, the teacher set up opportunities for successful interactions between the child with autism/PDD-NOS with one or two of the typically developing peers. Once the skill had been transferred, the children were allowed to play in an area of their choice, unattended, with minimal supervision.

The overall program was well suited for both the typically developing child as well as the child with autism/PDD-NOS. The curriculum was designed to follow a typically developing preschool day to provide the typically developing children with the opportunity for cognitive, emotional, and social growth. The children with autism/PDD-NOS were afforded the opportunity to interact with typically developing peers and gain experience in a "modified" regular education classroom, while concentrating on their area of weakness as outlined in their IEP. The benefit for the children with autism/PDD-NOS was evident in the structure of the classroom and in the curriculum being implemented.

Report of Action Taken

The implementation of the solution to the problem spanned a thirty-two week period. The plan involved all the staff of the integrated preschool. An orientation to the solution plan was discussed at a staff meeting. A daily schedule was devised that would reflect all the aspects of the solution plan (i.e., times for skill streaming,

times for pivotal response training, and times for the group contingency). The curriculum was discussed and lesson plans were devised on a daily basis for review. Baseline data was recorded on the IEP goals. The children for the program were selected.

Skill streaming, pivotal response training, and group contingency were utilized in the integrated setting to teach social, language and play skills. All of the expected outcomes were worked on in a variety of settings during this time period and data was taken on a daily basis by the staff. The remainder of the curriculum followed a typically developing preschool.

IEP goals and objectives were reviewed to compare rates to pre-solution rates. The unit supervisor of autism, the coordinator of curriculum, and the certified classroom teacher supervised the implementation of the proposal. These staff members worked closely with the project to ensure quality and clarity of the proposal. Staff training took place on an as needed basis.

Permission for the proposal was granted by the executive director of the school in conjunction with the program director. All necessary supplies were generated by the unit supervisor and disseminated at the beginning of week one. The private school program was capable of implementation of the proposal and made a strong commitment to its success.

CHAPTER V

RESULTS, DISCUSSION, AND RECOMMENDATIONS

RESULTS

Children with autism/PDD-NOS do not socially interact with their typically developing peers. It is difficult for them to carry on a social exchange based on the nature of their disability and their lack of exposure to typically developing children. In a private school for children with a diagnosis of autism/PDD-NOS, social skills were effectively being taught, however, these skills were not being used by the children with autism/PDD-NOS in a variety of settings. This practicum proposed to change this phenomena by enhancing the social skills of children with autism/PDD-NOS by developing a program that would incorporate typically developing peers, a structured way to teach social skills and symbolic play skills, and utilize a group contingency for motivation.

This would allow the children with autism/PDD-NOS the opportunity to learn in an environment that was similar to a "regular education" class and provide structured time for them to use their newly taught social skills.

The first expected outcome was that all 8 children with autism/PDD-NOS in the class would maintain eye contact when their name was called, for 8 to 10 seconds, in 9 out of 10 attempts. Data was recorded on a daily basis during learning center time initially, expanding to the entire day as the children used the skill as defined.

The second expected outcome was that the children with autism/PDD-NOS would demonstrate parallel and symbolic play skills. Each of the 8 students were expected to demonstrate parallel play skills, in a variety of settings, in 9 out of 10 attempts. During small group time, which was the period of the day when the children in the class were allowed to chose an area to play, staff recorded each time a child with autism/PDD-NOS played next to a peer for one minute or longer. Again, once the children with autism/PDD-NOS mastered the skill in small group time, the skill was encouraged to be used across all settings (i.e., playground time, gym time, etc.).

Once the children with autism/PDD-NOS achieved the parallel play skill, the staff moved into teaching and prompting symbolic play skills.

Again, the 8 children with autism/PDD-NOS were expected to demonstrate symbolic play skills, in a variety of setting, in 9 out of 10 attempts. Each time the child played with a toy in a way other than its intended function for one minute, the child would receive a correct response. The staff members recorded data during learning center time and expanded the data collection as the children's skills progressed.

The third expected outcome was that the children with autism/PDD-NOS would demonstrate turn taking skills during a group game. Each of the 8 children were expected to demonstrate turn taking skills, in a variety of settings, in 9 out of 10 attempts. For every time the child with autism/PDD-NOS waited 15 seconds prior to his turn, the staff member would record a correct response. The skills was taught initially during group time and generalized throughout the day as the children with autism/PDD-NOS achieved success with the skill.

The final expected outcome was that the children with autism/PDD-NOS would demonstrate spontaneous verbal and non-verbal responses when interacting with their typically developing peers. Each of the 8 children with autism/PDD-NOS were expected to demonstrate spontaneous verbal and non-verbal responses to peer interactions in 9 out of 10 attempts.

Each time a child with autism/PDD-NOS attempted an interaction with a peer (verbally or non-verbally), the staff member would record a correct response. As with all the skills taught, this skill was taught and reinforced during playground time first, and, as the children with autism/PDD-NOS became more proficient, the skills were encouraged to be generalized.

Prior to implementation of the proposed practicum, the IEP's of all the children with autism/PDD-NOS involved in the class were reviewed, and the expected outcomes were extrapolated from that document. The IEP objectives located in the social skills area were highlighted and a baseline was taken on all the 8 children involved in the class based on the skills chosen to be worked on during the practicum. Table 1 compares the baseline rates to the post-practicum rates for each of the 8 children.

Table 1

IEP Objectives

Student	Obj 1	Obj 2	Obj 3	Obj 4
1- BL	40%	50%	30%	30%
PPR	90%	90%	90%	90%
2- BL	70%	30%	40%	70%
PPR	100%	90%	100%	100%
3- BL	80%	40%	70%	80%
PPR	100%	90%	100%	100%
4- BL	60%	30%	70%	50%
PPR	100%	90%	100%	100%
5- BL	50%	40%	70%	70%
PPR	N/A	N/A	N/A	N/A
6- BL	60%	40%	60%	60%
PPR	100%	90%	100%	100%
7- BL	50%	30%	40%	50%
PPR	100%	100%	100%	100%
8- BL	40%	70%	70%	70%
PPR	100%	100%	100%	100%

Obj = eye contact
Obj = parallel/symbolic play skills
Obj = turn taking
Obj = Spontaneous verbal and non-verbal responses

BL = baseline rate
PPR = post-practicum rate

Discussion

The overall goal of this practicum was to enhance the social skills of children with autism/PDD-NOS through interactions with their typically developing peers. As stated in Table 1, it is quite obvious that the children with autism/PDD-NOS achieved all of the five social skills chosen. However, was this based on the method used, or was it just that the children picked were very high functioning children who would have achieved the chosen skills in any setting?

As outlined in Table 1, all the children with autism/PDD-NOS, but one, achieved 90% or better in each of the four social skills areas investigated. The one child who did not receive a post-practicum score was discharged from the program due to behavioral difficulties. This student was replaced by another child with autism. However, this student was not baselined due to the fact that he joined the class too late in the semester for inclusion in the project. The results of the other 7 children are consistent with the expected outcomes of the practicum.

The use of the skill streaming curriculum was critical in teaching all the children involved prosocial skills. Social skills must be taught in a structured way and reinforced for appropriate generalization (Salisbury, et al, 1995).

Each month during the practicum, the teacher, in conjunction with the supervisor of autism and curriculum coordinator, would choose a social skill. The skill was chosen based on the needs of the class. For example, during the fifth week of the practicum, the children in the class were having difficulty dealing with losing. The following month the class worked on dealing with how they felt when they lost.

Each month the class also chose what reward they would receive for successfully filling up the "star chart" based on the appropriate use of the social skill being taught that particular month. The class would decide on two things they wanted to work for (i.e., a trip to a fast food restaurant, candy, chips, etc.) and the class would vote on which reward they would receive if they were successful. During the practicum, it became apparent that when the group contingency was being voted on, there was an excellent teaching moment that could take place. The use of making charts based on the overall votes enhanced the math/science curriculum of the class.

Pivotal response training was also used in a successful way to teach all the children symbolic play. A majority of the children with autism/PDD-NOS entered that class with very good isolate toy play skills.

Parallel play skills were beginning to emerge, therefore, symbolic play skills were the logical next step to teach, especially when their typically developing peers were all using different stages of symbolic play skills. As all the children began to use symbolic play skills in an effective manner, a dress up area was designed to allow for the generalization of their newly formed skills.

The use of the peer modeling was highly successful in maintaining integration of the children in the class. Initially, the writer thought that the hardest aspect of the practicum would be to make sure that the children were intermingling and not forming two separate groups, autism/PDD-NOS and typical. Based on the high social skills of the typical children, the autism/PDD-NOS children gravitated towards their peers and were very interested in what their were doing and in what they were saying. Prompting techniques were used initially to maintain interactions. However, these prompts were quickly faded.

As discussed by Brown, McEvoy, and Bishop (1991), incidental teaching is very effective in teaching social skills to young children. During the practicum, the classroom began to change in scope. The children with autism/PDD-NOS began to initiate interactions with their peers and with the materials provided to them in the class.

This was a great opportunity to begin to use incidental teaching to carry over the social skills being taught during skill streaming into naturalistic settings. Once the child begins to become interested in materials and their peers, the teacher can effectively intervene and teach skills in an incidental way.

The goals of this practicum were met, and 5 of the 8 children in the class will be returning back to their local school districts in a variety of inclusive models. Two children will be remaining at the private school in a least restrictive environment (as opposed to returning to an autism/PDD-NOS classroom). The child that replaced the child that was discharged will remain in the class for another year. These types of results are very encouraging. However, the experiences those children have that are going back to their local school districts will truly tell the story of the success or failure of the integrated preschool experience.

The typically developing children in the class also made some observable gains during the duration of the practicum. The first area was in academic skills. It was quite obvious in the first two weeks of the program that the children with autism/PDD-NOS were far superior in academic skills then their typically developing peers. They could respond to questions with a greater degree of accuracy and joined in group activities more readily. They also knew more songs then their typically developing peers. This is based on the fact that the children

with autism/PDD-NOS have had at least 2 more years of formal schooling then the typically developing peers in the class.

The second area of gain was in self esteem. The typically developing children became peer tutors during the duration of the practicum. Initially, it was thought that there would have to be great deal of teacher intervention for the two groups to interact. However, the opposite was true. The typically developing children gravitated towards their peers with autism/PDD-NOS and would assist them in performing a variety of tasks. For example, one of the typically developing girls would always sit next to one of the boys with autism/PDD-NOS and help him cut. By the end of the school year, the boy with autism/PDD-NOS could cut on a straight line independently and the typically developing girl was very proud.

The third area of gain was in expressive language skills. Based on the way mean length of utterance is taught for children with autism/PDD-NOS, training simple to complex, the typically developing children made major gains in their mean length of utterance. The typically developing children were able to grasp the structure of sentences by being prompted with the appropriate model when they did not use a complete sentence. By the end of the school year, the mean length of utterance had increased significantly.

The last area of gain and probably the most important was the establishment of friendships between the typically developing children and the children with autism. This became the most apparent when the girl with autism/PDD-NOS was removed from the class for behavioral problems and another student was placed in her spot. All the children, at an unconscious level, did not let this new child into their group. He was new and had not been with the group from the beginning of the year. It required a great deal of teacher intervention to have this child fit into the class because the class had evolved and established friendships had already taken place.

Recommendations

1. It is critical for those children with autism/PDD-NOS who have pre-requisite skills to have an integrated experience to learn social and play skills with typically developing peers.

2. The use of typically developing peers as social role models for children with autism/PDD-NOS needs to be further researched.

3. The administration of the private school where the writer works needs to further investigate the possibility of another integrated preschool to allow for further integration of children with autism/PDD-NOS.

4. Further research must concentrate on the generalization of social skills by children with autism/PDD-NOS to fully realize whether

these children will be successful in an inclusive setting in their local school districts.

5. The use of the proposed model in this practicum must be further investigated to determine if the model used actually enhanced the social skills of the children with autism/PDD-NOS or that the children with autism/PDD-NOS would have achieved the same gains regardless of the setting.

Dissemination

The practicum was very successful for all the participants involved, especially those children with autism/PDD-NOS. Child study teams, the typically developing children and their families, the children with autism/PDD-NOS' families, the teaching staff, and the administration were very excited with the results of the first full year of the integrated preschool concept. The program will continue for the 1996-97 school year.

The concept and results of the practicum were presented at the Autism Society of America National Conference held in Milwaukee, Wisconsin during the month of July. The presentation was very well received and two consultations were discussed as a result. The consultations are to replicate the program in two other states. The basis of the consultations will be to incorporate skill streaming into "typical"

preschools that allow for integration of children with autism/PDD-NOS.

The writer will prepare a paper based on the practicum results for inclusion in a professional journal. This paper will discuss the formation of the class, the criteria list for inclusion in the class, and the methodology employed that made the program successful. The writer will also be submitting an abstract on the practicum to at least three other national conferences in the upcoming year.

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Appendix A

INTEGRATED PRESCHOOL CRITERION LIST

1. Learning Readiness
   a. establishes eye contact on command
   b. imitates a variety of gross motor movements
   c. sits appropriately upon request

2. Attention
   a. responds when name is called
   b. works independently on assigned tasks for 5 minutes
   c. sits and attends/participates for 5 minutes in a group (3-8 children)
   d. waits on request for 1 minute
   e. focus on stimulus (object/picture) when directed
   f. demonstrates an awareness of the activities of other children (intermittent)
   g. demonstrates functional play skills

3. Language
   a. follows simple one step commands:
      -get, touch, give, stand up, sit down, come here, and stop
   b. identifies common objects upon request
   c. demonstrates object function
   d. communicates want/need/desire (with/without augmentative
   e. demonstrates reliable yes/no response
   f. demonstrates ability to make choices in a field of 2
   g. exhibits turn taking in structured situations

4. Life Skill
   a. toilet trained in a reliable schedule
   b. performs basic self care skills with supervision
      -pants down, pants up, and wash hands
   c. eats independently with class supervision

5. Behavior
   a. does not exhibit behaviors which require consistent intervention
   b. does not exhibit behaviors that are potentially harmful
   c. transitions from one activity to another without distress